

INTRODUCTION

The U.S. Army Engineer Studies Center (ESC), an agency of the U.S. Army Corps of Engineers (USACE), has as its purpose the study and analysis of a wide variety of defense-related problems. During the 40 years of ESC's history, many of these studies have pertained to the Engineers and their activities, but ESC has also studied issues of interest to the entire military community. Among these varied subjects were strategic and tactical nuclear weapons, chemical and biological weapons, strategic mobility and rapid deployment, drug abuse, and the use of herbicides in Southeast Asia. No a priori reasons exist for one study agency to examine such a potpourri of defense problems; only an examination of ESC's historical development can explain why one small Defense Department "think tank" came to study such an unusual and eclectic array of topics.

The term "think tank" is a popular phrase applied to organizations that have analysis as their primary activity and studies or written documents as their primary product.¹ Think tanks have burgeoned in diverse fields since World War II, but their growth has probably been the most dramatic in the area of national defense. The range and large number of defense problems that emerged after 1945 have fostered the development of both private and public study organizations, and the prototype for many of them was the Rand Corporation. Although Rand is a nonprofit private corporation, from its origins at the end of World War II, it has had close ties with the Air Force.² In the years following the founding of Rand, a large number of both nonprofit and profit-motivated study organizations have sprung up. These organizations have depended on the Defense Department to provide the contracts that determine the issues they investigate and the money to support these inquiries. Unlike Rand and its imitators, ESC is an agency of the federal government, or to use the more common term, an "in-house" study agency.

Since its origins in 1943, ESC, under a variety of names, has been a part of the Corps of Engineers. The fact that the center's predecessor organizations continued operating after the war made it one of the earliest in-house Defense Department study agencies and one of the earliest postwar think tanks. In the next four decades these agencies proliferated, and at first glance there seems to be little justification for an organization as small as ESC or with as broad a study repertory to have survived as an independent agency for so long. Its anomalous location in the engineering, and in many

minds, the civil works, branch of the Army, its unusual study agenda, and its small size, have at times threatened ESC's continued existence. At its largest, the center never had more than 75 employees, and its 1982 size of almost 60 people more accurately reflects its average strength. In an age of largeness and consolidation, even within the study community, the center has been pressured periodically to merge with larger agencies. In spite of these pressures, however, ESC, under a variety of designations, has occupied its unusual niche within the Defense Department for 40 years.

* * *

While the subjects of ESC studies have changed over time, its functions and mission as a study and analysis organization have remained much the same since 1945. The current brochure describing the center states that "ESC's mission is to help solve engineer or engineer-related problems that are components of larger, Defense-wide problems."³ In 1982 the center's primary missions were to assist the Chief of Engineers in formulating policies related to his position as a major Army commander and as principal advisor to the Chief of Staff of the Army on Engineer matters; to assist the Corps of Engineers headquarters and field elements in performing their functions; and to provide support to any Army or Defense Department agency with projects that were Engineer-related.⁴ While these missions have remained relatively constant, ESC has performed broader study functions during various periods of its history. From its beginning, the center's charter has been flexible and inclusive enough to accommodate a variety of issues. Although its title and study repertory have often changed, ESC has worked consistently to "apply interdisciplinary, engineering, and operations research skills in a flexible systems approach to problems susceptible to the Center's particular competency."⁵

Throughout its history, ESC's principal output or products have been published study reports, unpublished papers, and briefings. The published studies are the center's primary formal product, and in the 1950s and 1960s they were often lengthy, running in one case to 11 thick volumes. In the early 1970s, however, the organization strived to shorten the studies' texts and make them more succinct. While most studies have been based on information already available from a variety of sources, the center's analysts have conducted personal interviews, surveys, and field trips if the study required them. The organization began using the computer facilities of other Army agencies in the early days of their development, and in 1973 ESC obtained its own computer. In preparing a study, the center's personnel worked closely with the study sponsor in order to obtain all the necessary data and to keep the sponsoring agency closely involved in the effort. In many cases, a sponsor received and often began acting upon a study's recommendations before the formal study was published. The close interac-

tion with the sponsor helped to keep a study relevant and provided ESC with the firm basis it required in order to make cogent recommendations.⁶

Unlike most study and analysis organizations, ESC has always insisted on concluding a study with a list of specific recommendations. The center has tried to avoid producing “attractive, involved reference books and papers to sit on library shelves. ESC is not interested in producing studies that only lead to more studies.”⁷ Instead, the center’s goal was to produce useful products that contained practical, direct recommendations that facilitated decision-making by the study sponsors. As a result, the organization has always stressed communicating a study’s conclusions and recommendations in a manner that is clear, understandable, and convincing. Although the published studies in the ESC *Bibliography* are the best source of historical information on the center’s work, the informal working relationship between ESC analysts and the study sponsor and the briefings of study conclusions often have been the center’s most effective tools for influencing decision-makers at all levels. Since the 1950s, ESC’s leaders have stressed the importance of briefings and graphic presentations, and the record of the organization’s impact on the Defense Department must take into account not only the studies, but also the less tangible but often very effective verbal and visual techniques for communicating study results. While it is often difficult to assess the effect of one study or study organization on the complex decision-making processes of the Defense Department, ESC studies and briefings have often been singled out as important factors.⁸ Its more than 350 studies, numerous briefings, and a multitude of informal papers and reports constitute an important body of information on the defense problems and decisions of the post-World War II era.

* * *

Although ESC has changed its name frequently, it has always been an agency of the U.S. Army Corps of Engineers (see figures 1 and 2). From 1943 until 1947, it was located in various buildings in the Washington area, but for the next 31 years, until 1978, it was housed with the Army Map Service (AMS), later called the Defense Mapping Agency (DMA), in Brookmont, Maryland, just beyond the northwestern boundary of the District of Columbia. From 1947 until 1960 it was attached to AMS, the Corps of Engineers agency responsible for the Army’s cartographic work. In many ways the relationship with AMS had a positive, symbiotic effect, because the Map Service provided intelligence information, maps, and other graphic support, as well as a variety of administrative services, including office space and personnel functions. On the other hand, the relationship often led to confusion, especially when ESC’s predecessors began doing work that went well beyond the mapping functions associated with AMS. Finally, in 1959, the Chief of Engineers eliminated some of the confusion by specifying that the organization would report directly to the Engineer officer who was

ESC ORGANIZATIONAL HISTORY

6 Feb 45	Planning Branch, War Plans Division
30 Apr 45	Planning Branch, Plans and Training Division, Military Operations
30 Jun 47	Strategic Planning Section, Army Map Service
26 Oct 50	Military Plans Division, Army Map Service
4 Nov 54	Planning Studies Division, Army Map Service
1 Dec 59	Strategic Planning Group, Troop Operations
3 Sep 63	Engineer Strategic Studies Group, Topography and Military Engineering
20 May 74	Engineer Studies Group, Facilities Engineering
1 Jul 77	Assigned to Deputy Chief of Engineers
27 Nov 77	Engineer Studies Center, Deputy Chief of Engineers; also made FOA

Figure 1

ORGANIZATIONAL TITLES USED IN EACH CHAPTER*

Chapter II	Strategic Planning Section (SPS)
Chapter III	Planning Studies Division (PSD)
Chapter IV	Strategic Planning Group (SPG)
Chapter V	Engineer Strategic Studies Group (ESSG)
Chapter VI	ESSG
Chapter VII	Engineer Studies Center (ESC)
Chapter VIII	ESC

*Because the changes in the title of the organization do not correspond exactly with the chronological limits of subsequent chapters, one name has been used throughout each chapter. Refer to figure 1 for the title of the organization at any particular time.

Figure 2

in charge of the military activities of the Corps. The center was still located in the AMS building, but the relationship between the two agencies was only for administrative purposes. After 1959 ESC reported to several different

offices in Engineer headquarters until the organization was in 1977 made directly responsible to the Deputy Chief of Engineers, the second-in-command of the Corps. In that same year, the newly renamed Engineer Studies Center became an independent field operating activity (FOA).⁹

The termination of the center's longstanding relationship with AMS and DMA was gradual. In the late 1970s, DMA began consolidating several of its functions in the buildings in Brookmont, and in 1978 the pressure for space forced ESC to move to a temporary building erected on Corps property just behind Sibley Hospital in the Northwest section of the District of Columbia. Shortly thereafter the Corps began constructing a building at Fort Belvoir, Virginia, that included facilities for the center, and in August 1982 ESC moved to northern Virginia.¹⁰

When ESC moved to Fort Belvoir, it had an actual strength of 47 civilians and 6 Army officers, a substantial increase from the 8 civilians who composed the Strategic Planning Section in 1947. The organization grew slowly until the mid-1950s, when an influx of Army officers increased its size by almost 50 percent (see figure 3). This increase was due mainly to a broadening of the study repertory, and ESC's strength remained relatively steady until the mid-1970s. Although the center's personnel have been predominantly civilian since its origin, both officers and enlisted men formed a substantial proportion of the organization for almost two decades. With the end of the war in Vietnam and the decline of military budgets in the early 1970s, the number of military personnel declined markedly and the overall size of the organization fell to a level that remained almost constant into the 1980s. ESC has always been smaller than many Army study and analysis agencies, and its size has naturally affected the amount of work it could undertake. Although the center's name, location, size, and organizational relationships have changed frequently, it has remained one of the oldest and most active study and analysis agencies in the Defense Department.

* * *

Just as ESC's organizational relationships within the Corps of Engineers changed often during its history, so too did its internal organizational structure. Although the changes were not always closely correlated in time, modifications in ESC's internal organization usually reflected modifications in the subject matter it was studying. Until 1970 the center had a hierarchical structure composed of several major units called branches or divisions, which were in turn divided into subunits called sections or branches. Each unit and subunit had a functional title, and its number depended on the nature and importance of the topics that the organization was investigating.

The earliest extant organizational chart, dating from March 1950, indicated the center's preoccupation with Engineer logistical matters (see

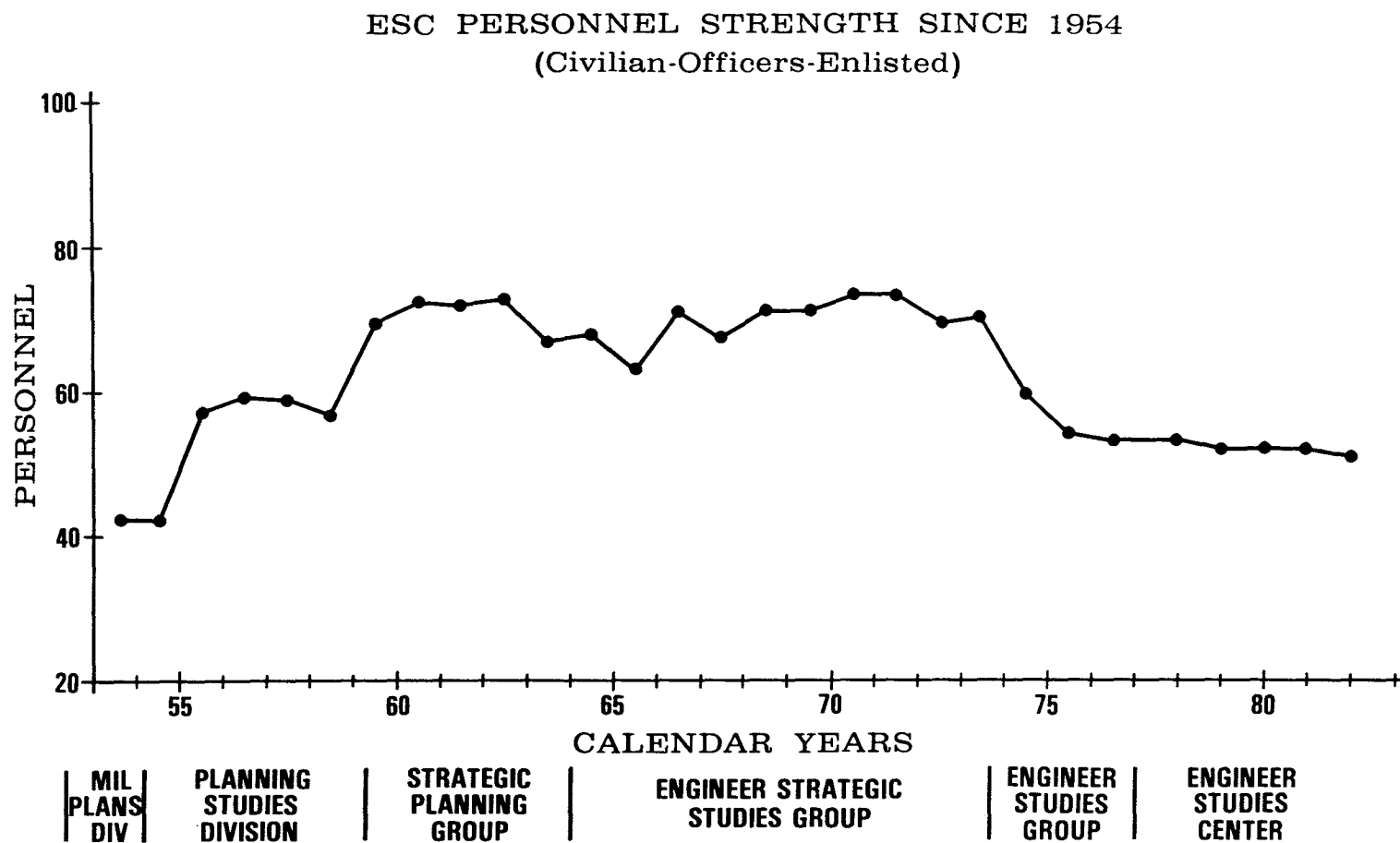


Figure 3

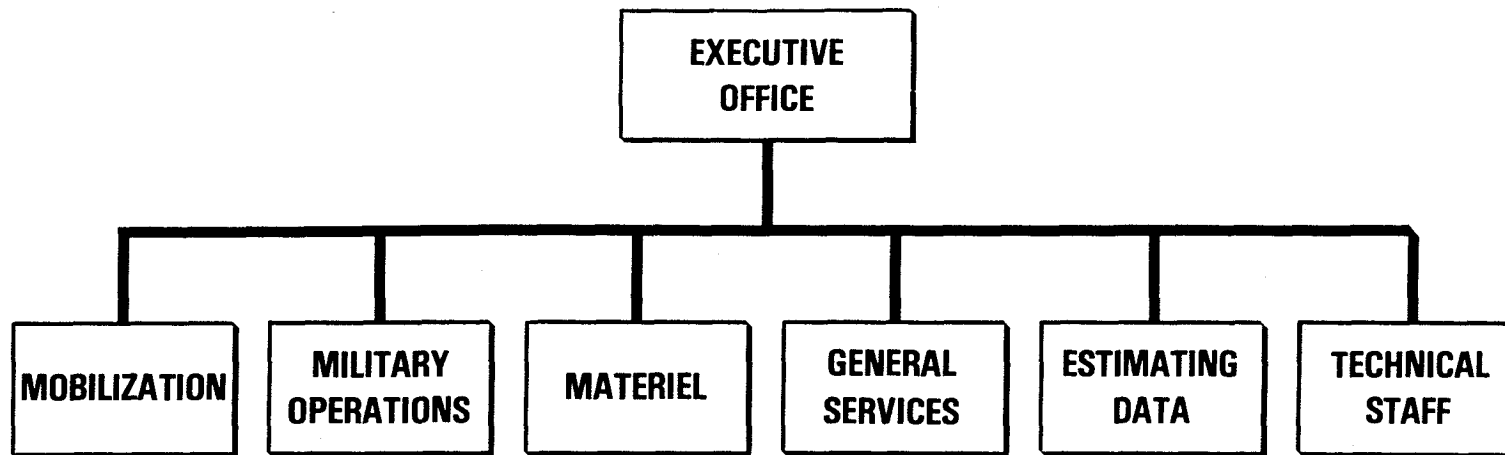
figure 4). The bulk of the Strategic Planning Section's employees, except for the administrative personnel, held positions concerned with materiel, ports, railroads, highways, airfields, structures, petroleum, and installations. The chief and assistant chief formed a headquarters element as they would throughout ESC's history, and the small administrative staff was a separate unit. From the 6 analysts and 2 clerk-stenographers who moved to AMS in 1947, the Strategic Planning Section had grown to a staff of 14 analysts and 3 administrative personnel.¹¹

By 1954, however, the Military Plans Division (MPD) had grown in size and in organizational complexity, reflecting both the evolution and the expansion of the topics that concerned the division (see figure 5). The two branches were the Logistic Support Branch and the Operational Plans Branch. The Logistic Support Branch continued MPD's work in Engineer logistical subjects, which by the mid-1950s had become more formalized and complex. The MPD was now responsible for drawing up detailed documents that projected all the Engineer materials, equipment, and troops that the Army would require to support hypothetical troop deployments to various parts of the world. The Army called these studies Department of the Army Strategic Logistic Studies (DA-SLs). In addition, the Chief of Engineers had assigned MPD the task of devising a system of standardized components for military facilities, called the Engineer Functional Components System (EFCS), which would simplify logistical planning and operations. These and other logistical functions were the responsibility of the various sections within the logistical branch.

The new Operational Plans Branch represented the division's entry into the field of planning Engineer support for military campaigns. Although the organization had taken on these functions in the early 1950s, by 1954 one section of the branch was responsible for barrier planning and the other for "special weapons." Barrier planning involved the use of man-made and natural obstacles to inhibit enemy troop movements, and the special weapons were atomic ones. Both of these areas of operational planning were important additions to the MPD study repertory.

In late 1959 the internal organization of the Strategic Planning Group (SPG) reflected several major changes that had taken place in the previous five years (see figure 6). The group had consolidated Engineer logistical planning and barrier planning in the War Plans Division, which was further subdivided into specialized combat, construction, and troops and equipment branches. The EFCS and other specialized materiel matters were the responsibility of the Materiel Planning Division. The greatest change in both organizational arrangements and personnel allocation, however, had occurred in the Special Weapons Division, which had not only become an entirely separate division, but also now included almost one-third of the group's personnel. In keeping with the Eisenhower administration's emphasis on nuclear arms, SPG devoted a great deal of effort in the late 1950s to studies on the employment of atomic weapons, and the

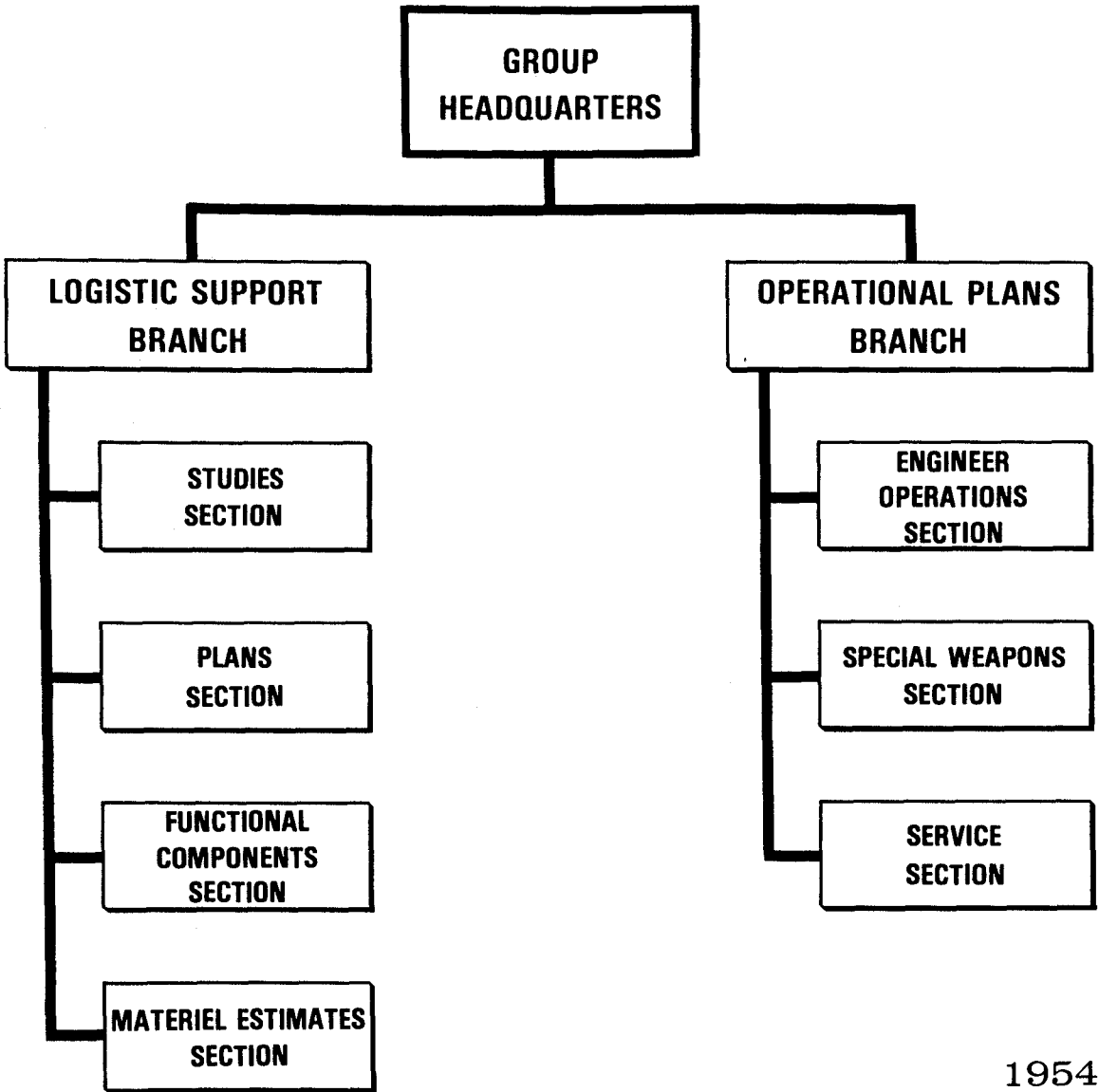
STRATEGIC PLANNING SECTION



1950

Figure 4

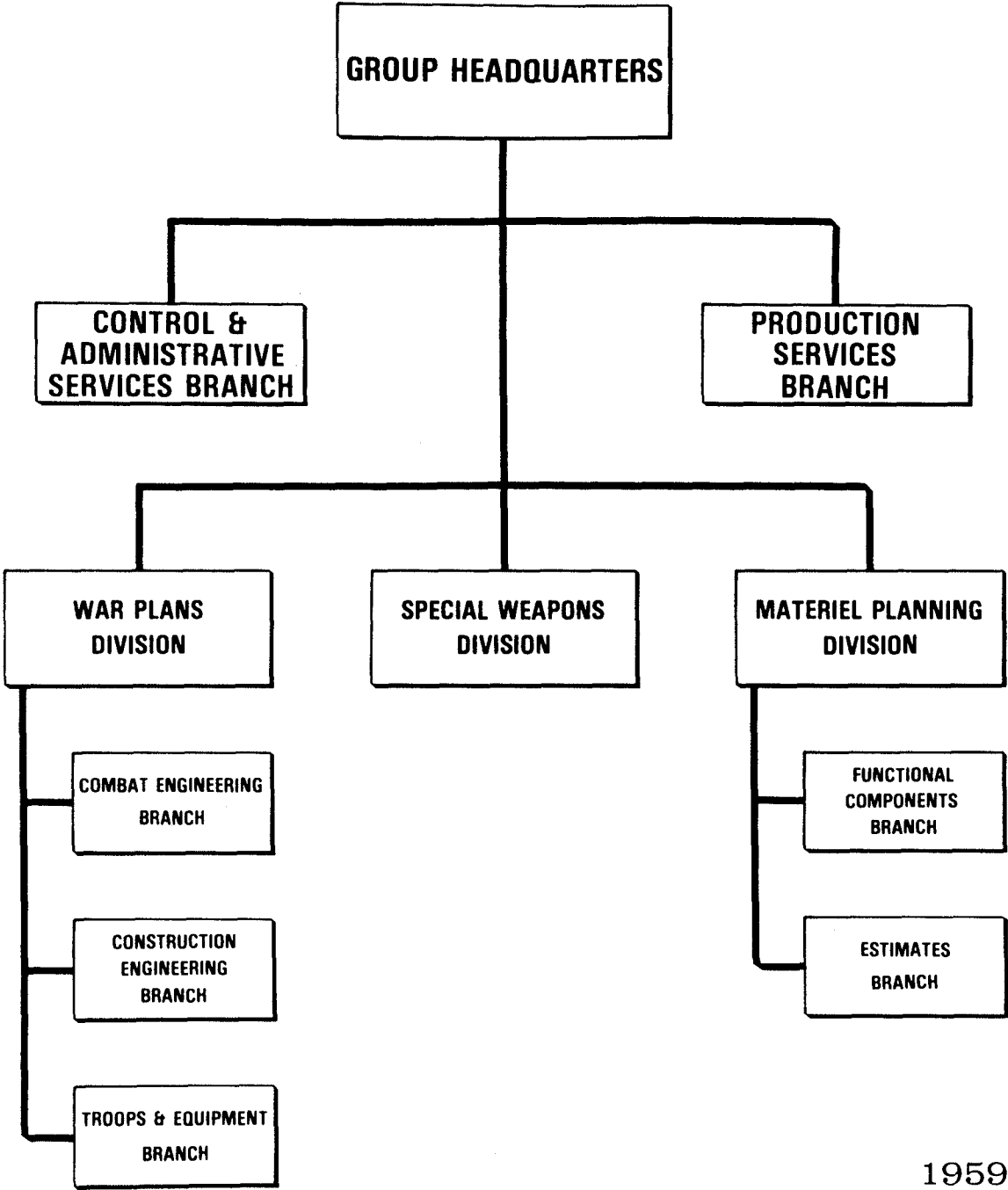
MILITARY PLANS DIVISION



1954

Figure 5

STRATEGIC PLANNING GROUP



1959

Figure 6

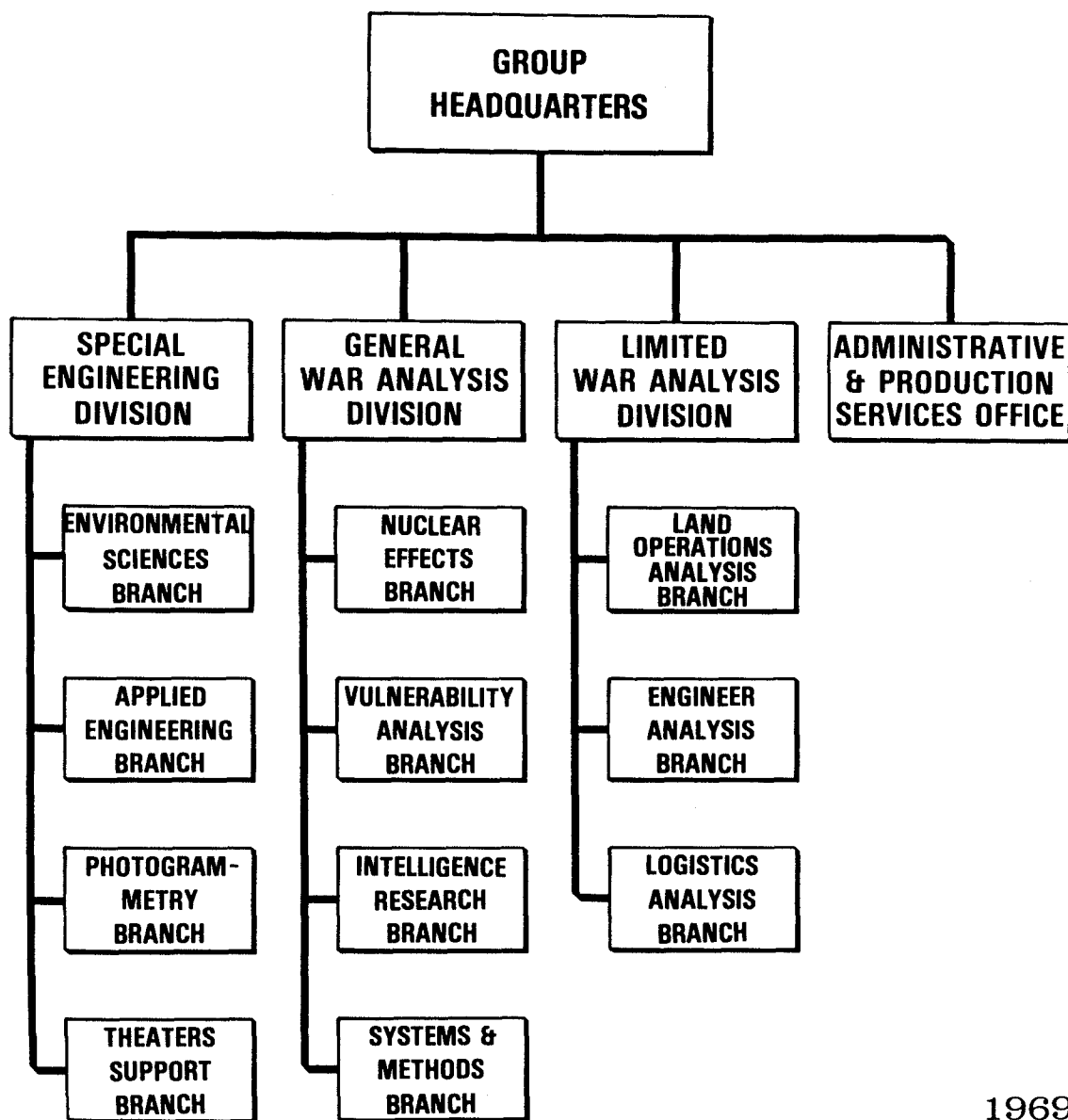
importance of this topic was reflected in its organizational arrangements.

In the mid-1950s the organization had already made substantial changes in its administrative and support structures. Two branches emerged that were separate from the headquarters and the analytical divisions. The Control and Administrative Services Branch did most of the routine administrative work of the organization and kept track of its classified documents. The Production Services Branch prepared visual and illustrative materials for the ever-increasing number of formal studies and briefings that the organization produced. While each of the analytical divisions still performed some administrative services such as typing, these new branches were the predecessors of the center's present administrative and production services structure.

In the early 1960s, SPG's internal organization did not change dramatically because the group adapted quickly to the demands of the McNamara Defense Department. However, the four-year existence of one new division and the altered functions of another denoted the influence of the new administration. In August 1960, SPG had formed a Vulnerability Analysis Division, which assumed responsibility for investigating the effects that a nuclear attack might have on the United States. Nuclear weapons effects had been a concern of the Special Weapons Division, but the new emphasis on civil defense prompted the creation of a separate division. By 1964 this division had completed its most important studies, and it was again subsumed as a branch in the Special Weapons Division, which had continued its studies of strategic and tactical nuclear weapons. In the 1960s the War Plans Division concentrated less on Engineer logistical planning and more on the newly important subject of general purpose land forces. When the Kennedy administration adopted the policy of flexible response and placed greater emphasis on conventional military forces, SPG became heavily involved in Army studies on the subject. At critical times, most of the personnel in the organization worked on these studies. But in more routine times, general purpose forces became the responsibility of the War Plans Division. The Materiel Planning Division continued its work on the EFCS. In 1966 the Engineer Strategic Studies Group (ESSG) consolidated its two support branches into one Administrative and Production Services Office, but several support personnel remained attached to the analytical divisions. While in the early 1960s the organization retained many of its functions from the Eisenhower era, it also felt the influence of the Kennedy-McNamara period.

In the late 1960s ESSG experienced several more changes in organization and functions (see figure 7). In 1967 the Chief of Engineers transferred the EFCS to the Directorate of Military Construction, and ESSG abolished the Materiel Planning Division. Taking its place in 1968 as the third analytic division was Special Engineering—a unit working with the techniques and results of satellite photography. The two other divisions that had in effect been dealing with general (nuclear) war and limited war (the

ENGINEER STRATEGIC STUDIES GROUP



1969

Figure 7

Special Weapons Division and the War Plans Division) received titles that were more descriptive of the work they had been performing. In the late 1960s the Limited War Analysis Division worked extensively on engineering and logistical problems associated with the war in Southeast Asia, and the Materiel Planning Division, prior to its abolition, devoted a substantial effort to preparing bills of materials for construction projects in South Vietnam. The General War Analysis Division continued its increasingly sophisticated studies of nuclear weapons and added a Systems and Methods Branch to assist with statistical and computer operations. Although the

number and titles of the various units and subunits had changed periodically since 1947, the basic organizational structure had always been one composed of hierarchically arranged, structurally separate components.

In 1970 ESC underwent a major internal reorganization designed to reduce “excessive management layering” and to increase the flexibility and responsiveness of the organization.¹² The old organizational structure had produced several layers of managers including branch chiefs, division chiefs, and finally the deputy chief and chief in the group headquarters. Each of the branches and divisions had a specific title that designated the area of its competence and tended to divide the group into somewhat narrowly focused and isolated specialties. ESSG’s chief, Colonel John P. Chandler, instituted a more flexible internal organization that combined the bulk of the professional analytical personnel in the broadly titled Studies, Analysis, and Applications Division (SAAD) (see figure 8). Within SAAD, the chief could form a varying number of “independent, flexible, project-oriented elements” devoted to particular studies or types of studies. As Colonel Chandler noted, when “the study assignments and emphases change, the number and composition of these subelements change to fit the situation.”¹³ The subelements within SAAD in 1970 reflected the major study concerns of the group: general purpose forces; strategic nuclear weapons; military engineering; special engineering; logistical planning; and a new concern that had emerged from the early experiences in Southeast Asia, base development planning. As the group’s interests and projects changed, these elements could be easily redesignated and personnel reassigned in order to respond to a project’s requirements.

Although administrative support services had already been consolidated into one office, the reorganization of 1970 called for all the remaining secretarial and clerical support personnel, who had previously been assigned to the old divisions, to be included in the expanded Administrative and Production Services Office (APSO). A fourth element, the Systems and Methods Support Division (SMSD), brought together personnel who were specialists in quantitative, statistical, and computer techniques, and this office provided technical support to SAAD. The reorganization of 1970 thus eliminated much of the old hierarchical structure and made ESSG more flexible and adaptable to changing circumstances.¹⁴

Along with the internal reorganization, the group also instituted new management practices. In place of a rigidly hierarchical management structure, ESSG implemented a corporate management procedure. The group chief, his deputy, the senior project directors who headed the elements within SAAD, and the chiefs of the supporting elements formed a corporate management board (CMB) similar to a board of directors in a corporation. While day-to-day management was still vested in the headquarters and the administrative support office, the CMB met periodically to review studies in progress and to plan the future workload of the organization. The board also handled matters relating to training, career

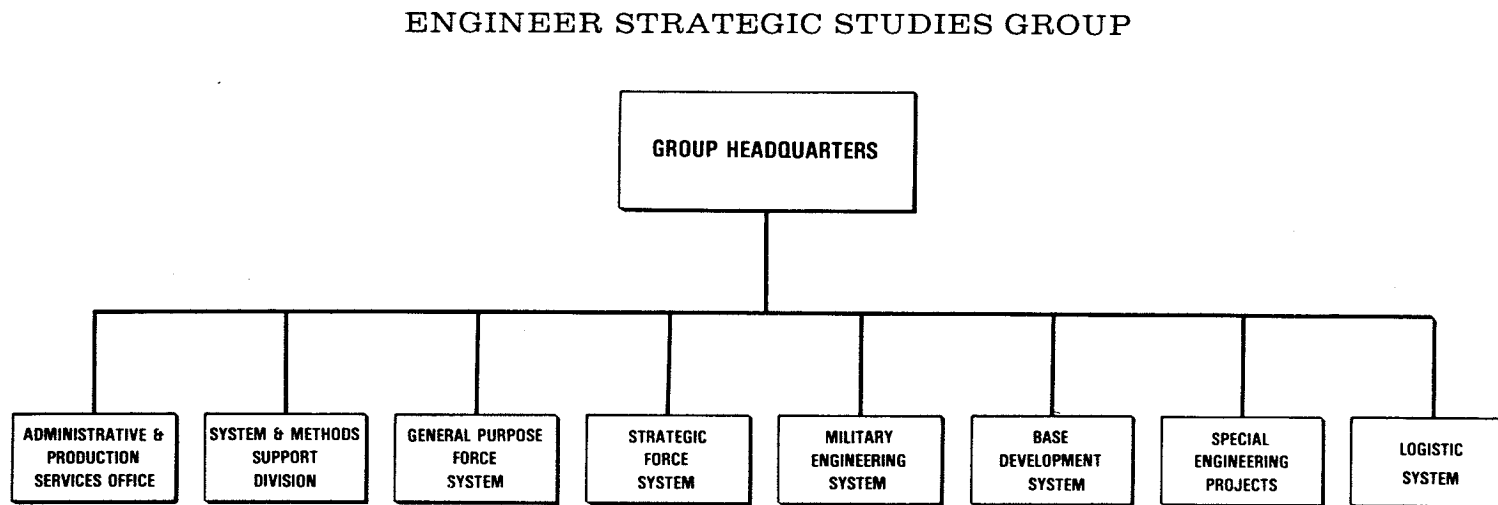


Figure 8

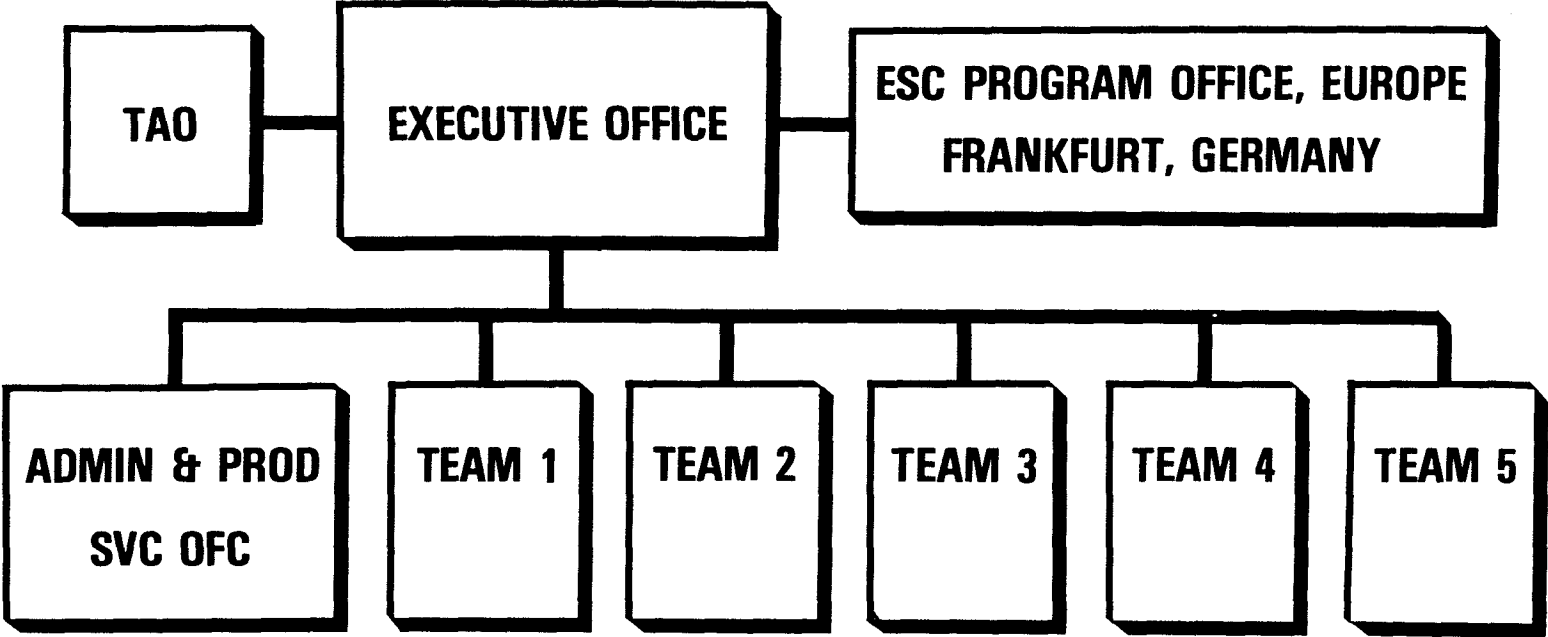
1970

development, awards and promotions, and facilities. According to Colonel Chandler, "the express purpose of this body is to create an environment of participative management which will go hand-in-glove with the notion of a 'flat' organization and flexible inter-disciplinary teams."¹⁵ The corporate management principle was a new one for government agencies and for the Army, and ESC was one of the first agencies to institute it.¹⁶ With the reorganization of 1970, ESC assumed the basic internal configuration that would continue throughout the decade and into the next.

During the early 1970s the center made additional internal adjustments and modifications to improve its productivity and work environment. In 1970, APSO established a word processing center (WPC) that increased the efficiency and improved the quality of the center's typing process, and in 1979 the WPC obtained modern, sophisticated equipment. The center's WPC was one of the first in the Army. In 1973, ESC purchased a Wang mini-computer, which supplemented the center's access to larger computers at DMA and other Army agencies. The mini-computer gave all ESC analysts easy access to computer facilities and the center conducted in-house training sessions designed to acquaint all personnel with computer operations. The organization encouraged all personnel to devote a proportion of their working time to training that would increase their skills or introduce them to new fields, such as computer operation. In 1972, ESC was one of the first federal offices to introduce flexible working hours, now called flexitime. Flexitime allowed employees to establish their own daily working hours within certain limitations. These changes kept the center in the forefront of modern office practices.¹⁷

Some adjustments to the organizational structure were made in 1978 but these were logical extensions of the original 1970 principles. In that year ESC dropped the titles of the various elements within SAAD and referred to them simply as teams (see figure 9). The Systems and Methods Support Division (SMSD) was abolished as a separate unit and its members became a team in SAAD. The center's leadership felt that the existence of SMSD as a separate element kept it too isolated from the substantive work on studies, and the program to introduce all ESC analysts to computer techniques reduced the need for a distinct methods division. These organizational adjustments were related to substantial changes in ESC's study repertory. In the mid-1970s the organization began doing more work for the Chief of Engineers and Corps of Engineers' agencies, and most of the studies dealt with topics in military engineering and management analysis. While the previous elements within SAAD had been flexible and varying, the new study emphasis did not conform to the old element designations. Because the new structure had been designed to accommodate such changes, it was appropriate that the specific designations disappear to be replaced by an even more fluid and adaptable system. After the war in Vietnam, ESC also shifted the geographic emphasis of its studies to the European theater. In

ENGINEER STUDIES CENTER



1982

Figure 9

response to the need for closer coordination with U.S. Army agencies located in Europe, the center established its Program Office, Europe, in Frankfurt in July 1979. With these new arrangements ESC felt prepared to undertake whatever Engineer and Engineer-related study efforts seemed useful and important to the Army.¹⁸

The organizational element that consistently appeared in the charts throughout ESC's history was the headquarters. With the exception of the first commander, Robert A. Lewis, an officer who had retired from active service in the demobilization after World War II, the center's commanders have been active duty Army colonels (see figure 10). Brigadier General Donald G. Weinert, USA (Ret.), was the only commander to advance to general officer rank while serving as commander, and David S. Parker was the only former commander to rise to the rank of major general. However, former ESC military analysts, such as Bennett Lewis, became lieutenant generals, and others, such as Richard Wells and Hugh Robinson, became major generals. All of these officers had served in a variety of Engineer assignments prior to coming to ESC, and several of them already had experience in Army study and analysis. Colonel Stanley W. Dziuban, USA (Ret.), had received a doctorate from Columbia University prior to becoming commander. Although the commanders' tours of duty rarely exceeded two years, Colonel William Wootton, USA (Ret.), had the distinction of commanding the center twice with a tour in Vietnam during the interim. Although most of ESC's commanders played an important role in the internal operation of the center, their primary responsibility was to supervise and coordinate the center's relationship with the various Army agencies in its external environment.

From the appointment of the first military chief, Colonel Warren S. Everett, USA (Ret.), in 1955, until 1968, the second in command at the center was also an active duty officer, generally a lieutenant colonel. Although most of the ESC staff have been civilians since 1945, the mid-1950s saw a strong infusion of military personnel, and their numbers remained relatively high until a decline in the early 1970s due to the ending of the war in Southeast Asia, the decline in military budgets, and reductions in the size of the Army. Because military officers generally changed assignments frequently, the commander from 1967 to 1968, Colonel John C. Coyne, felt that ESC needed a more stable civilian leadership element to provide continuity and stability. Thus, prior to the reorganization of 1970, Colonel Coyne made the deputy chief's position a civilian post with the title of technical director. George H. Orrell, an ESC employee since 1960, became the first technical director and remained in that position until March 1982.¹⁹ Although the colonel, now titled the commander/director, is in charge of the center and in command of its officers, the technical director and the civilians have provided the continuity, the long-term experience

ESC COMMANDERS

Robert A. Lewis	1947–55
Warren S. Everett	1955–56
John A. Morrison	1956–57
David S. Parker	1957–60
John C.H. Lee	1960–62
Stanley W. Dziuban	1962–64
William B. Wootton, Jr.	1964–67
John C. Coyne	1967–68
William B. Wootton, Jr.	1968–69
John P. Chandler	1969–71
William G. Stewart	1971–73
James H. Tormey	1973–75
Donald G. Weinert	1975–77
Walter C. Bell	1977–78
Richard T. Robinson	1978–81
Robert D. Carpenter	1981–

Figure 10

within the organization, and the collective sense of its history and mission that have been essential to ESC's success.

Although the civilians provided ESC with stability and continuity, the colonels had an important position as links between ESC and the Army community. The interviews with 9 of the 14 former commanders revealed, however, that none of them knew very much about the organization prior to becoming its director. In the period prior to the 1970s this was due largely to the fact that the center did most of its work for Army agencies outside the Corps, and as Engineer officers, the colonels had few occasions to encounter ESC studies unless they had served on the Army staff. In the roughly 25 years after 1950, the center was in fact virtually independent of the Corps of Engineers—a status that had an enormous effect on its work.

After its transfer to the Army Map Service facilities in Maryland in 1947, ESC was located some distance from both the Office, Chief of Engineers (OCE) and the Pentagon. This physical distance helped the center avoid being drawn into the routine day-to-day staff work that preoccupied most staff officers. In addition to the valuable intelligence, graphic, and computer support provided by AMS and later DMA, location in its facilities and for some time on its organizational charts served to provide ESC with a certain salutary obscurity away from the press of daily staff work and the

danger of daily staff intervention. In one confrontation between the Army and the Air Force over strategic weapons planning in the late 1950s, General Nathan Twining accused the Army of having 200 people hidden away at the Map Service, devoting their full energies to finding flaws in Air Force war plans. While the number of ESC personnel critiquing Air Force strategy was less than half a dozen, the organization was in some senses hidden away at AMS.²⁰

All the commanders interviewed indicated that they received very little guidance and direction from the Chief of Engineers or his subordinates when they assumed command. While the commanders were always careful to keep OCE informed of their activities, from the 1950s to the mid-1970s at least, the Chief of Engineers' office was, in the words of Colonel Coyne, "essentially an administrative holding office for ESC which operated rather independently."²¹ Because ESC was working primarily for the Army staff during this period, according to General Parker, "the Chief of Engineers did not really pay too much attention to [ESC] because what we did was so far removed from his traditional responsibilities."²² Colonel Wootton indicated that in the late 1960s his superior in OCE hesitated to give orders to ESC because the colonel, if pressured, would respond, "we are doing work for the Office of the Secretary of Defense."²³ Although the center did not do a great deal of work for OCE during this period, it was identified as an Engineer agency and served as a valuable Corps representative to other Army agencies. ESC's work kept the rest of the Army aware of the Corps, and through its relations with other agencies in the Army and the Defense Department, the center could keep the Chief informed of trends throughout the military. ESC served "to show the Engineer flag."²⁴

The center's amorphous position as a largely autonomous Corps agency also helped to protect the integrity of its studies. Because most of its work prior to the mid-1970s was done for agencies outside the Corps, ESC was less vulnerable to pressure from the sponsors of its studies. "We did not have an ax to grind in most of the issues," General Parker explained, "so we could afford to be fairly independent."²⁵ Location within the Corps structure not only shielded ESC, but also provided it with access to talented Engineer officers. According to General Parker, "the Chief of Engineers office was very good about letting us handpick officers. If you can pick a few officers every year and bring them in, you are going to have a good organization."²⁶ ESC's unusual position within the Corps, although amorphous, proved to be a valuable asset.

By the mid-1970s the center began doing a great deal more work for the Corps of Engineers. The Chiefs of Engineers during this period wanted more support from the organization, and the proliferation of Army study agencies and the fears that their work was becoming duplicative meant that a small study agency like ESC needed to emphasize its forte in order to avoid consolidation or abolition. For a few years the center occupied an

anomalous position as a subordinate agency of the Directorate of Facilities Engineering, but in 1977 it was made a field operating agency directly responsible to the Deputy Chief of Engineers. According to Colonel Robinson, commander from 1978 to 1981, this position also helped to ensure ESC's independence and objectivity.²⁷ While its study emphasis and organizational location have changed substantially since its origins, the center has by now built a long history and a significant reputation as an independent and impartial study agency.

From the 1950s to the present ESC has also benefited from having more demand for its services than it could often fulfill. Colonel Robinson estimated that in the late 1970s the demand was three times the center's capabilities, and the same situation existed as far back as Colonel Everett's tenure.²⁸ Colonel Coyne illustrated the advantages of this position in a rather graphic manner: "We used to joke, not altogether facetiously, that we had a good world because if DCSOPS [Deputy Chief of Staff for Operations] wanted us to undertake something that seemed ridiculous, we could tell them we were busy with things for the Chief of Engineers. But if the Chief wanted us to undertake something that did not look very attractive, we would tell him we were very busy with DCSOPS."²⁹ While ESC's leadership may not have used this ploy often, the heavy demand for studies did allow it some latitude in choosing those studies that seemed most suited to the center's goals and the Army's needs.

The variety of factors that helped to foster ESC's position as an independent agency and its reputation for objectivity were outgrowths of the peculiar circumstances of its historical development. No one in the beginning consciously intended to produce an Engineer study agency like ESC. Yet, through a particular and unplanned series of events, the center evolved into an agency whose history naturally encompassed subjects as diverse as strategic nuclear weapons, drug abuse, herbicides, facilities engineering, and dredges. The chapters that follow attempt to trace and explain the development of ESC's study repertory from 1943 to 1982. Because ESC is a studies and analysis agency, what follows is an intellectual history of its growth and development. Few Defense Department agencies could claim that their history touched every major defense issue since World War II. Therefore, for a small and at times obscure—but always busy—organization, the Engineer Studies Center has been involved with an impressively large array of the national security issues that have preoccupied the United States for the last four decades.

Notes for Chapter I

1. Paul Dickson, *Think Tanks* (New York: Atheneum, 1971).

2. Bruce L.R. Smith, *The Rand Corporation: Case Study of a Non-profit Advisory Corporation* (Cambridge, MA: Harvard Univ. Press, 1966).
3. *Engineer Studies Center* (Washington, DC: n.p., n.d.), p. 2.
4. Office of the Chief of Engineers (hereafter cited as OCE), "Organization and Functions: U.S. Army Engineer Studies Center," Engr. Reg. No. 10-1-29, 18 May 1981.
5. Ibid.
6. Interview with George H. Orrell, Washington, DC, 7-8 Oct. 1981; and Annual Historical Summaries, FY 76 and FY 77, ESC Historical Files.
7. *Engineer Studies Center*, p. 3.
8. Interviews with Col. Warren S. Everett, USA (Ret.), Grand Rapids, MI, 19 Feb. 1981; Maj. Gen. David S. Parker, USA (Ret.), San Francisco, CA, 10 Nov. 1980; and Mr. Orrell.
9. Letter from the Chief of Engineers to the Commanding Officer, Army Map Service, 30 June 1947; OCE, Genl. Orders No. 20, 3 Dec. 1959; Annual Historical Summary, FY 77, ESC Historical Files.
10. Annual Historical Summaries, FY 77 and FY 78, ESC Historical Files.
11. The following discussion of ESC's internal organization is based on extensive materials in the ESC Historical Files, which also contain the organizational charts.
12. Col. John P. Chandler, "Request for Approval of ESSG Reorganizational Plan," 16 Mar. 1970, ESC Historical Files.
13. Ibid. See also interviews with Col. John P. Chandler, USA (Ret.), Hill, NH, 27 May 1981; and Mr. Orrell.
14. Col. John P. Chandler, "Request for Approval of ESSG Reorganizational Plan."
15. Col. John P. Chandler, "Corporate Management Roles," 24 Mar. 1971, ESC Historical Files.
16. Interviews with Col. Chandler and Mr. Orrell.
17. Annual Historical Summaries, FY 70 and FY 79, ESC Historical Files; Col. William G. Stewart, "ESSG Flexible Work Hours," 16 Oct. 1972, ESC Historical Files.
18. Annual Historical Summaries, FY 78 and FY 79, ESC Historical Files.
19. Interview with Col. John C. Coyne, USA (Ret.), Coupeville, WA, 4 Nov. 1980.
20. Interview with Maj. Gen. George A. Rebh, USA (Ret.), Washington, DC, 10 Mar. 1981.
21. Interview with Col. Coyne.
22. Interview with Gen. Parker.
23. Interview with Col. William B. Wootton, Jr., USA (Ret.), San Francisco, CA, 7 Nov. 1980.

24. Interview with Mr. Orrell.
25. Interview with Gen. Parker.
26. Ibid.
27. Interview with Col. Richard T. Robinson, USA (Ret.), Washington, DC, 21 May 1981.
28. Ibid.; and interview with Col. Everett.
29. Interview with Col. Coyne.